Fund Council

9th Meeting (FC9)—New Delhi, India

April 25-26, 2013

Proposal to the CGIAR Fund for 2013
Generation Challenge Program Support

(FC approved an allocation of $5.5 million from Window 1 for the GCP in 2013 to support ongoing activities and related administrative costs.)

Document presented for Agenda Item 10:
Proposal for 2013 Transition Financing

Submitted by:
Consortium Office

Consortium

Proposal to the CGIAR Fund Council for 2013 Generation Challenge Program support

Background

As per the recommendation made in the proposal "2012 Transition Financing" approved by the Fund Council on October 17, 2012, the Consortium is now requesting the third and final tranche for the Generation Challenge Program (GCP) in 2013. The GCP was launched in 2004. In the last two years, it has been supported by Window 1 funds through the Stability Funding (2011) and Transition Funding (2012). 2013 is the close-out year for this program; it is the only program left outside of the CRP portfolio, and special financing is requested to complete its exit strategy. This will be the final year support is requested from the CGIAR Fund for GCP.

In keeping with the GCP Transition Strategy drafted in 2010, research activities in the GCP workplan for 2011–2014 have been integrated into the respective crop-based CGIAR Research Programmes (CRPs) to the extent possible. As agreed with the CGIAR Consortium Board and the Fund Office, GCP will continue monitoring these activities, in collaboration with scientists from the crop CRPs, until the end of current contractual obligations to GCP grant recipients in 2014. Should any of these research activities be extended beyond GCP's lifetime, they shall be managed by the CRPs in keeping with their respective strategies.

GCP expects EC funding in 2013 for an amount of $8M, but this amount will likely not be contractually agreed until late in 2013 (or early 2014). Given the special conditions of GCP, winding down its activities with an agreed sunset date, the program cannot simply delay activities. GCP management have informed the Consortium that if it does not have assurances of funding availability by June 2013, it will have to inform its partners that it will prematurely wind down and cut back on planned activities. This premature termination would result in a loss of outputs valued well beyond the amount directly involved, because of past investments maturing in these final stages of the program.

Two recommendations

Recommendation 1: The Consortium recommends that the Fund Council approves funding for the Generation Challenge Program 2013 for USD 5.5 million (same level as 2012, final tranche) to support ongoing activities and related administrative costs in order to properly manage these activities as per the budget attached below. For 2013, the Fund's contribution will be allocated to commissioned and competitive research, with a considerable capacity development component, as well as an allocation to the General Research Meeting which will incorporate training and provide opportunity for professional networking. Jointly, these research and capacity building activities, described in the attached proposal, comprise the workplan to GCP's sunset in 2014.

Recommendation 2: The Consortium recommends[1] that the Fund Council approves an additional $8M of "backup funding" to GCP from the CGIAR Fund that will only be disbursed to the extent the EC support for GCP in 2013 does not materialize. GCP's host center, CIMMYT will be able to pre-finance, if needed, with this backup of CGIAR funding, as per the request from GCP below and the GCP proposal to the EC attached.

Budget

GCP 2013 funding requirements		**21,800**
2013 requested funding from CGIAR	5,500	
Expected 2013 funding from EC (or CGIAR Fund, as backup)	8,000	
Funding from other sources (BMGF, SDC)	8,300	**21,800**
CGIAR Budget allocation		
Personnel cost	650	
Operational travel	120	
Operating expenses, eg General Research Meeting	1,300	
IB–MYC training/workshops (capacity building implementation)	1,500	
Research projects (partners/collaborators)	1,500	
Institutional overhead	430	
Total	**5,500**	

The Lead Center for the GCP is CIMMYT.

[1] In accordance with a decision of the Consortium Board of March 5, 2013.

ANNEX A

March 2013

The CGIAR Generation Challenge Programme (GCP) is a 10-year initiative focusing on crop improvement in developing countries with an emphasis on drought tolerance. Designed in two five-year phases (2004–2008 and 2009–2013, with 2014 as a transition year for orderly closure), its mission is to use genetic diversity and advanced plant science to improve crops by adding value to conventional breeding for drought-prone and harsh environments.

Overview

GCP addresses to varying extents all four System-Level Outcomes (SLOs) described in the CGIAR Strategy and Results Framework: reducing rural poverty, improving food security, improving nutrition and health, and sustainable management of natural resources. However, due to our primary emphasis on the use of modern breeding methods for improving crops, particularly for drought tolerance, the key focus is on the second SLO – improving food security.
The project's **overall goal** is to use genetic diversity and advanced plant science to improve crop productivity and resilience for nine crops in drought-prone environments for greater food security in the developing world.

Objectives

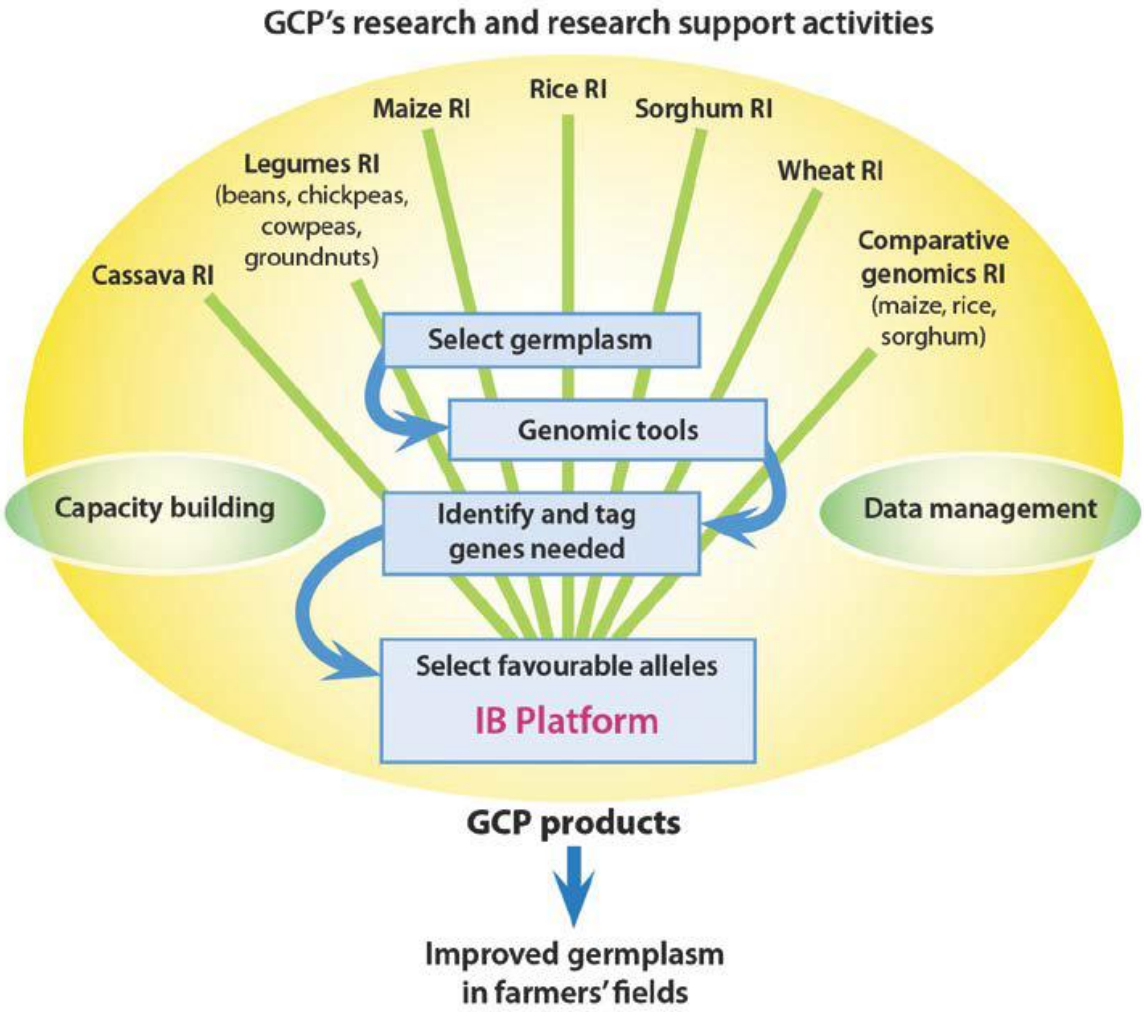
These include:
1. Exploiting the genetic diversity and associated phenotypic variation in the vast range of crop germplasm available through GCP's network and partners for enhanced crop resilience and productivity
2. Developing cross-cutting research platforms for the efficient and practical application of genomic tools and knowledge towards breeding
3. Identifying and pyramiding new favourable alleles for crop improvement using genomic tools and services
4. Linking and integrating information components and analytical tools into a coherent information platform
5. Building capacity for advanced crop breeding by partners in developing countries, at both the human and infrastructure level
6. Establishing strategic partnerships to facilitate the flow of research products through the research–delivery continuum

Outputs

These include: new genetic resources, favourable alleles and their linked molecular markers to improve efficiency in crop breeding, a cross-cutting technology platform and related tools and services to accelerate breeding efficiency, integrated data management systems, improved germplasm for drought-prone environments, improved capacity of project partners, and research products put into use.
First **users** of those outputs and products are mainly plant scientists and breeders in developing countries, who utilise them to better understand the genetic basis of drought tolerance and related traits, and develop crop varieties with enhanced resilience and productivity for resource-poor farmers in stress-prone agroecologies in sub-Saharan Africa, South and Southeast Asia and Latin America.

The overall **major outcome** of the Programme will be improved breeding programmes in developing countries, achieved by enabling scientists in those countries to access and adopt modern breeding technologies, thus increasing their efficiency in producing germplasm enhanced with desirable traits that boost food security.

GCP's workplan for Phase II is built on a set of seven focused Research Initiatives (RIs) supported by an integrated breeding service component and a comprehensive capacity development strategy (see diagram below). Each RI is crop- or crop cluster-, region- and trait-specific for meaningful impact by the Programme's closure.



While the RIs aim to demonstrate – through selected user cases – that modern and integrated breeding approaches can have a significant impact on crop productivity in developing countries, the service component (the Integrated Breeding Platform, IBP) is conceived as a vehicle for dissemination of knowledge and technology, enabling broad access to, and proactive distribution of, crop genetic stocks and breeding material; molecular, genomics and informatics technology and information; cost-effective high-throughput laboratory services; and capacity building programmes.

GCP Research Initiatives

The seven Research Initiatives (RIs) are organised by crop clusters covering the following target crops: *Cereals* – 1) maize, 2) rice, 3) sorghum, 4) wheat, 5) comparative genomics (maize, rice and sorghum); 6) *Legumes* (beans, chickpeas, cowpeas, groundnuts); and *Roots and tubers* – 7) cassava. The six crop-based RIs focus primarily on the identification of genes and the stacking of favourable alleles with molecular markers for drought tolerance, alongside other key biotic and abiotic stresses such as pests and diseases, given that effective crop breeding does not take place in the isolation of a single constraint.

The seventh RI focuses on the use of comparative genomics to identify homologous loci for aluminium tolerance and phosphorus-uptake efficiency across three major cereals (maize, sorghum and rice). This RI builds on major achievements from GCP Phase I – the cloning of a key gene for aluminium tolerance in sorghum, jointly by Cornell University (USA) and the Brazilian Agricultural Research Corporation (EMBRAPA), as well as the identification of a major gene for phosphorus-uptake efficiency in rice from work led by scientists from the International Rice Research Institute (IRRI) and validated with partners at Indonesia's national agricultural research programme. Capacity-building and research data management are both fully integrated into the RIs.

The Research Initiatives cover 20 countries in Asia (China, India, Indonesia, Japan, Thailand, Philippines, and Vietnam), Latin America (Brazil, Colombia, Mexico, Nicaragua) and sub-Saharan Africa (Burkina Faso, Ethiopia, Ghana, Kenya, Mali, Mozambique, Niger, Nigeria, Senegal, Tanzania, and Uganda).
In particular, the 2013 contribution from the Fund will support the payment of the remaining 10 or 20 percent of a large number of commissioned and competitive projects that will be concluded in 2013. In keeping with our project management policy, we retain 10 or 20 percent of the last year funding, depending on the nature of the project, to ensure that projects will be closed in an orderly manner. Just as for project progress annual reports, the final technical and financial reports have to be jointly approved by the relevant member of the GCP Management Team and the Project Officer, respectively. The release of the remaining funds is conditional to publication of the data generated by the project to a public database, with appropriate documentation.
The resources allocated to the research projects also include supporting commissioned activities that are going to run until 2014. It comprises development of genetic resources, such as MAGIC (multiparent advanced generation intercross) populations for chickpeas, cowpeas and rice that will represent valuable material to identify new genes for breeding as well as parental lines for new crosses. The development of new markers, focusing on less-studied crops, as well as new algorithms to run genomics-assisted breeding in developing countries.
These new genomic resources and analytical tools are going to be available through the Integrated Breeding Platform (IBP), a platform developed under the coordination of GCP aiming at providing developing countries with access to modern breeding technologies, breeding materials and related information in a centralised and practical manner, thus facilitating their adoption of molecular breeding approaches and improving their plant breeding efficiency. GCP supports molecular breeding activities to improve drought tolerance in several GCP target crops, such as beans for Central America, maize for South and Southeast Asia and cassava and sorghum for sub-Saharan Africa. The improvement of sorghum will be achieved through the introgression of favourable alleles to confer the desired 'stay green' phenotype for that crop in water-limited conditions.

Capacity development strategy

A major objective of GCP is to enable scientists in developing countries to get exposed and be able to access and use modern breeding approaches aiming to bridge gaps preventing the adoption and implementation of molecular breeding techniques in Africa and Asia. Therefore, since its inception in 2004, GCP has been very significantly supporting capacity building in close collaboration with partners to address their needs. This will continue in 2013 as part of our strategy implementation, and a significant part of the Fund's contribution will be allocated to CB activities.
Capacity-building is also crucial for the long-term adoption of GCP research products, and is an indispensable prerequisite for enabling research product delivery. GCP capacity-building activities are hence conducted in direct support of GCP Research Initiatives to bridge gaps that would prevent the achievement of research objectives, while simultaneously boosting the ability of developing-country research institutes to play a growing role and progressively take the lead in research projects. CB interventions include but are not limited to the following:
1. *Comprehensive training programme* for breeders spread over three years (see IB–MYC below), as well as separate training for their technicians and field staff
2. *Services* to access markers by new users of molecular technologies (Genotyping Support Service)
3. *Establish and improve field infrastructure* at selected sites to assure high-quality phenotyping data
4. *Postgraduate studies* for staff in partner developing-country research institutes, pegged to GCP RIs.

Integrated Breeding Multi-Year Course
Purpose
The Integrated Breeding Multi-Year Course (IB–MYC) aims to train a core group of scientists from within and outside GCP, in integrated breeding in three target regions – West and Central Africa (WCA), Eastern and Southern Africa (ESA), and South and Southeast Asia (SSEA). The course equips them with the necessary knowledge and skills to access information and modern analytical tools and methods, and thus undertake integrated breeding projects. IB–MYC will also enhance the adoption of IBP tools, and enable trainees to access cutting-edge tools and services to efficiently manage and make good use of project genotypic and phenotypic data; provide them with sustained technical support in the use of these new and emerging tools; and identify and train local trainers to initiate and sustain capacity-building interventions at local and regional levels.

Content, implementation and selection of trainees
Selection and target
IB–MYC targets breeders working on GCP's nine target crops, plus soya beans (to serve our TLII [Tropical Legumes II] collaborators). Candidates are selected from GCP projects, and our institutional partners. We also tap into other

networks (eg, CORAF/WECARD, FAO's Global Partnership Initiative for Plant Breeding Capacity Building (GIPB), Rothamsted International alumni, etc). The target is to train 180 scientists ('sub-target' of 60 per region).

Content

• Year 1 focuses on transferring vital skills in experimental design, basic statistics, initiation to data management, electronic data collection, data analysis and introduction to molecular breeding. Given the heterogenous nature of trainees, Year 1 content is basic, to bring all trainees to the same level.

• Year 2 will include: analytical approaches for establishing marker–trait association and its implementation; simple QTL detection(single trait, single environment), QTL×E analysis and multiple-trait QTL analysis; MARS, MABC and MAS; data management – managing germplasm information, field trial and genotypic data.

• Year 3 will be determined by progress made during the first two years. It will be more applied, with trainees working on their specific projects and troubleshooting any problems. It could include follow-up on tool usage, and advanced analyses for breeding programmes using simulation tools, genetic diversity analysis and association mapping.

Implementation

IB–MYC's first year of implementation was 2012, with one workshop for each of our three target regions (see Table 1 below). Trainees undergo customised two-weeks-per-year technical training, thus culminating in a cumulative total of six weeks of intensive residential training. Continuation to Year 2 is conditional to satisfactory completion of Year 1 work and assignments, which are a blend of research, data management and statistics.

Table 1. IB-MYC trainees by crop and region

No	Crop	Region			Total
		ESA	WCA	SSEA	
1.	Beans	19	—	1	20
2.	Cassava	4	10	—	14
3.	Chickpeas	8	—	15	23
4.	Cowpeas	3	11	—	14
5.	Groundnuts	7	3	8	18
6.	Maize	11	5	4	20
7.	Rice	4	12	11	27
8.	Sorghum	4	11	—	15
9.	Soya beans	1	1	2	4
10.	Wheat	1	1	13	15
TOTALS					**170**

Crop communities and the Genotyping Support Service

All IB–MYC trainees are strongly encouraged to be active members of at least one IBP crop community .The trainees have suggested that community pages be linked to social media. This feature will be included in 2013.

IB–MYC trainees are offered the opportunity to initiate a small molecular breeding project, prioritising those not conducting any MB, and then those with MB experience but not involved in a GCP project. GCP's Genotyping Support Service (GSS) provides SNP markers a few SSRs for cases where markers associated with traits are known and there is not yet a known SNP marker. The project has to be on QTL identification, marker-assisted selection (MAS) or marker-assisted backcrossing (MABC): diversity study and association mapping are not eligible. An internal call to IB–MYC trainees was made in 2012, and a follow-up call will be made in 2013.

Additional plans for 2013

Preparations for IB–MYC Year 2 are in progress. We plan to invite molecular breeders from private companies to give talks and lead discussions. This will give trainees a solid and practical perspective on routine use of molecular breeding applications on a day-to-day basis in an actual and successful breeding programme.

IB–MYC has clearly has aroused a real interest from the trainees. This is well reflected through the high level of completion of the assignments (more the 90 percent). Trainees appreciated the detailed comments on their assignment by the statistics team, so this feedback will continue, as well as support to improve on weaknesses.

Some trainees have volunteered to be future trainers. Training of the future trainers is planned for 2013. Also, whenever possible, opportunity will be taken to hold training side events during breeder meetings, as was done in

2012 during the Global Cassava Partnership (GCP21) meeting in Uganda. Several 2013 events have already been identified for beans, cassava and rice, and more will be considered as we learn about them.
Discussions were initiated in December with two West African universities (University of Dakar and the West Africa Centre for Crop Improvement – WACCI – at the University of Ghana) to incorporate some of IB–MYC's content into their postgraduate curricula. These discussions, which also involve the West and Central African Council for Agricultural Research and Development (CORAF/WECARD), will continue in 2013. The goal is building a critical mass of next-generation scientists who understand, master and inculcate informatic tools and data management as part and parcel of their basic training.

General Research Meeting (GRM)
CGIAR funds would also support expenditure for our General Research Meeting (GRM) in 2013, which brings together about 150 scientists. GRM is an excellent forum for scientists in GCP projects to meet with their project teams and network with other GCP and non-GCP scientists, share their research results and jointly plan for the upcoming year. Through the mix of GCP and non-GCP scientists, with networking fora integrated into the formal programme, the meeting also provides opportunities for rekindling old connections and making new ones. Through these connections, and reconnections, some of our scientists plan for collaborative activities on their crops or areas, independent of GCP funding.
The GRM is sculpted along a two-dimension matrix covering crops as well as GCP's five thematic areas (genomics, breeding, crop information, capacity building, product delivery). The 2013 GRM is still at the very early planning stages, but will likely include Programme-level discussion on GCP's sunset and more specifically the thematic Position Papers.
Parallel events and discussions will be organised at crop level, as well as crop-specific data management sessions. There will be follow-up and sharing experiences on using the digital tablet for electronic data capture, as well as a data management clinic for one-on-one sessions with data management experts. High on the agenda will be orientation on IBP tools, particularly the Integrated Breeding Workflow System (IBWS) and the electronic IB Fieldbook. The detailed agenda is to be formulated over the next few months, since the 2013 GRM is towards the end of the year, scheduled for September.

Letter from the GCP Director to the Consortium CEO

Monday, Feb 25th, 2013

Dear Frank,

I am writing with regard to our finances.

The financial health of the Generation Challenge Programme (GCP), and our ability to successfully implement our workplan, are both in jeopardy owing to the withdrawal of the European Commission's financial support to CGIAR in 2012, for the reason we know.

But in order to frame the situation in proper context, please allow me to first briefly present a few facts to give you good grounding on our current situation:

- Consistent with the vision of its founders, GCP is to be brought to an orderly close at the end of December 2014.
- By that time, research activities are going to be embedded into respective crop CRPs, and the Integrated Breeding Platform, a major asset of the Programme, will be best positioned as a cross-cutting platform to serve the needs of Centres and partners.
- As projected in our workplan, our carryover has been successively reduced through the years to reach about ½ million of remaining funds by December 2014 when GCP closes, in compliance with our host agreement with CIMMYT.
- By so doing, we have subsequently lost the flexibility to buffer late donor disbursements.
- To meet our objectives by fully implementing our projected workplan for these critical final years as the work comes to fruition, we need an income of about US$ 19 million.
- On the basis of signed contracts, GCP is expecting to receive in 2013 about 5m from the Gates Foundation. We also expect in 2013 a final payment of 5.5m from the Fund Office (transition payment, window 1) and about 0.5m from the Swiss Agency for Development and Cooperation (Window 3)
- In April 2012, we were informed that the EC projected to support GCP at a level of 6.1m euros (about US$ 8m) over a period of 2 years: 2012-13
- Although the EC funds above were not disbursed in 2012, the EC remains committed to disburse that amount to GCP in 2013, should funding to the CGIAR be resumed.

Therefore, with the cancellation of the EC contribution for 2012, our limited remaining carryover, and the uncertainty around the EC contribution for 2013, we will soon be facing a serious financial crisis in the event that there is no change in the current situation over the coming months, and most certainly by May–June.

In the circumstances, we unfortunately had no other choice but to alert our partners whose projects were to be supported by the EC funding about a possible cut in our funding for the last year of the Programme, and an involuntary termination of their current project, probably by June 2013. This would be quite a disaster as without this last suite of complementary tertiary activities, most of the Programme objectives will ultimately not be achieved, a good part of previous investments will be lost, and we will have to consider premature closure of the Programme. Besides the science, there is also a human and social cost, as the cut will be disastrous for project staff whose positions are pegged to the research grants supported by the EC. A large portion of the research budget is allocated to partners in National Programmes.

Consequently, to mitigate this unfortunate outcome, we would like to kindly seek support from the CGIAR Consortium and the CGIAR Fund Council to help GCP and its partners bridge this difficult situation.

Building on the encouraging discussion we had in your office on February 19, we would like to seek for your support for the following:

1. To have an 'early' payment of the 2013 allocation from the Fund Office to GCP (5.5m), preferably by early May 2013.
2. To have by mid-May a commitment from the CGIAR Consortium supported by the Fund Council of USD 8m that could be allocated to GCP in 2013, as 'pre-financing' for the 2013 EC contribution that should come later in the year, should the EC renew their funding to the CGIAR.

Based on our current cashflow projection should it be possible to meet our request in number 1 above, and because payment to our partners are generally delayed compared to workplan calendar since payment for the following year are subject to approval of technical and financial reports for the year ended, we need not receive the 'mitigation' funds (in number 2 above) before October 2013. Payment in tranches would also be a viable option.

It is understood that the funds requested in number 2 above are to be considered strictly as an advance on the EC 2013 contribution to GCP.

We hope to count on your support to help us smoothly implement our current workplan, and therefore meet the expectations of our stakeholders.

Should you need additional information or clarification, kindly let me know.

Sincerely yours,

Jean-Marcel Ribaut